This product is not manufactured for Iran. SVC Warraty will not be applicable and the user will be responsible for service expenses when the product is used in Iran.

QUESTIONS OR COMMENTS?

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AP80S0A Series
AP0AS0A Series

Air Conditioner
user & installation manual

Planet First 100% Recycled Paper

This manual is made with 100% recycled paper.

imagine the possibilities

Thank you for purchasing this Samsung product.

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SAMSUNG

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Features of your new air conditioner

Highly sensual and fine quality design

Neat and elegant style allows it to be placed naturally anywhere within your interior.

Compact remote controller

Remote controller is compact enough to fit it your hand for easier use.

Triple safety system

Triple safety system provides high reliability and outstanding durability.

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Safety precautions

These warning signs are here to prevent injury to you and others. Please follow them carefully.

Important safety symbols and precautions :

WARNING	Hazards or unsafe practices that may result in **severe personal injury or death.**
CAUTION	Hazards or unsafe practices that may result in **minor personal injury or property damage.**
	Follow directions.
	Do NOT attempt.
	Make sure the machine is grounded to prevent electric shock.
	Unplug the power plug from the wall socket.
	Do NOT disassemble.

FOR INSTALLATION

WARNING

Plug the power cord into a wall socket with the power specifications of the product or higher and use the socket for this appliance only. In addition, do not use an extension cord.

- ▶ Extending the power cord may result in electric shock or fire.
- ▶ Do not use an electric transformer. It may result in electric shock or fire.
- ▶ If the voltage/frequency/rated current condition is different, it may cause fire.

The installation of this appliance must be performed by a qualified technician or service company.

- ▶ Failing to do so may result in electric shock, fire, explosion, problems with the product, or injury.

Install a switch and circuit breaker dedicated to the air conditioner.

- ▶ Failing to do so may result in electric shock or fire.

Fix the outdoor unit firmly so that the electric part of the outdoor unit is not exposed.

- ▶ Failing to do so may result in electric shock or fire.

Do not install this appliance near a heater, inflammable material. Do not install this appliance in a humid, oily or dusty location, in a location exposed to direct sunlight and water (rain drops). Do not install this appliance in a location where gas may leak.

- ▶ This may result in electric shock or fire.

Never install the outdoor unit in a location such as on a high external wall where it could fall.

- ▶ If the outdoor unit falls, it may result in injury, death or property damage.

This appliance must be properly grounded. Do not ground the appliance to a gas pipe, plastic water pipe, or telephone line.

- ▶ Failing to do so may result in electric shock, fire, and explosion, or other problems with the product.
- ▶ Never plug the power cord into a socket that is not grounded correctly and make sure that it is in accordance with local and national codes.

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Safety precautions

FOR INSTALLATION | ⚠ CAUTION

Install your appliance on a level and hard floor that can support its weight

▶ Failing to do so may result in abnormal vibrations, noise, or problems with the product.

When installing the outdoor unit on the street, make sure to install it on the place with height over 2m or on the place where warm air from the outdoor unit does not blow directly to the pedestrian.

▶ This is a policy on the architectural standards and it must be followed.

Install the draining hose properly so that water is drained correctly.

▶ Failing to do so may result in water overflowing and property damage.

When installing, remove the wooden palette used for product transport.

▶ When there is fire, this may cause spread of fire.

FOR POWER SUPPLY | ⚠ WARNING

When the circuit breaker is damaged, contact your nearest service center.

Do not pull or excessively bend the power line. Do not twist or tie the power line. Do not hook the power line over a metal object, place a heavy object on the power line, insert the power line between objects, or push the power line into the space behind the appliance.

▶ This may result in electric shock or fire.

FOR POWER SUPPLY | ⚠ CAUTION

When not using the air conditioner for a long period of time or during a thunder/lightning storm, cut the power at the circuit breaker.

▶ Failing to do so may result in electric shock or fire.

FOR USING | ⚠ WARNING

If the appliance is flooded, please contact your nearest service center.

If the appliance generates a strange noise, a burning smell or smoke, unplug the power plug immediately and contact your nearest service center.

▶ Failing to do so may result in electric shock or fire.

In the event of a gas leak (such as propane gas, LP gas, etc.), ventilate immediately without touching the power line. Do not touch the appliance or power line.

▶ Do not use a ventilating fan.

▶ A spark may result in an explosion or fire.

To reinstall the air conditioner, please contact your nearest service center.

▶ Failing to do so may result in problems with the product, water leakage, electric shock, or fire.

▶ A delivery service for the product is not provided. If you reinstall the product in another location, additional construction expenses and an installation fee will be charged.

▶ Especially, when you wish to install the product in an unusual location such as in an industrial area or near the seaside where it is exposed to the salt in the air, please contact your nearest service center.

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Do not touch the power plug or the circuit breaker with wet hands.

▶ This may result in electric shock.

Do not strike or pull the air conditioner with excessive force.

▶ This may result in fire, injury, or problems with the product.

Do not place an object near the outdoor unit that allows children to climb onto the machine.

▶ This may result in children seriously injuring themselves.

Do not turn the air conditioner off with the circuit breaker while it is operating.

▶ Turning the air conditioner off and then on again with the circuit breaker may cause a spark and result in electric shock or fire.

After unpacking the air conditioner, keep all packaging materials well out of the reach of children, as packaging materials can be dangerous to children.

▶ If a child places a bag over his/her head, it may result in suffocation.

Do not insert your fingers or foreign substances into the outlet when the air conditioner is operating.

▶ Take special care that children do not injure themselves by inserting their fingers into the product.

Do not insert your fingers or foreign substances into the air inlet/outlet of the air conditioner.

▶ Take special care that children do not injure themselves by inserting their fingers into the product.

Do not use this air conditioner for long periods of time in badly ventilated locations or near infirm people.

▶ Since this may be dangerous due to a lack of oxygen, open a window at least once an hour.

If any foreign substance such as water has entered the appliance, cut the power by unplugging the power plug and turning the circuit breaker off and then contact your nearest service center.

▶ Failing to do so may result in electric shock or fire.

Do not attempt to repair, disassemble, or modify the appliance yourself.

▶ Do not use any fuse (such as cooper, steel wire, etc.) other than the standard fuse.

▶ Failing to do so may result in electric shock, fire, problems with the product, or injury.

FOR USING | ⚠ CAUTION

Do not place objects or devices under the indoor unit.

▶ Water dripping from the indoor unit may result in fire or property damage.

Check that the installation frame of the outdoor unit is not broken at least once a year.

▶ Failing to do so may result in injury, death or property damage.

Max current is measured according to IEC standard for safety and current is measured according to ISO standard for energy efficiency.

Do not stand on top of the appliance or place objects (such as laundry, lighted candles, lighted cigarettes, dishes, chemicals, metal objects, etc.) on the appliance.

▶ This may result in electric shock, fire, problems with the product, or injury.

Do not operate the appliance with wet hands.

▶ This may result in electric shock.

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Safety precautions

Do not spray volatile material such as insecticide onto the surface of the appliance.

▶ As well as being harmful to humans, it may also result in electric shock, fire or problems with the product.

Do not drink the water from the air conditioner.

▶ The water may be harmful to humans.

Do not apply a strong impact to the remote controller and do not disassemble the remote controller.

Do not touch the pipes connected with the product.

▶ This may result in burns or injury.

Do not use this air conditioner to preserve precision equipment, food, animals, plants or cosmetics, or for any other unusual purposes.

▶ This may result in property damage.

Avoid directly exposing humans, animals or plants from the air flow from the air conditioner for long periods of time.

▶ This may result in harm to humans, animals or plants.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

FOR CLEANING | ⚠ WARNING

Do not clean the appliance by spraying water directly onto it. Do not use benzene, thinner or alcohol to clean the appliance.

▶ This may result in discoloration, deformation, damage, electric shock or fire.

Before cleaning or performing maintenance, unplug the air conditioner from the wall socket and wait until the fan stops.

▶ Failing to do so may result in electric shock or fire.

FOR CLEANING | ⚠ CAUTION

Take care when cleaning the surface of the heat exchanger of the outdoor unit since it has sharp edges.

▶ To avoid cutting your fingers, wear thick cotton gloves when cleaning it.

Do not clean the inside of the air conditioner by yourself.

▶ For cleaning inside the appliance, contact your nearest service center.

▶ When cleaning the internal filter, refer to the descriptions in the "Cleaning and maintaining the air conditioner" section.

▶ Failure to do may result in damage, electric shock or fire.

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Checking before use

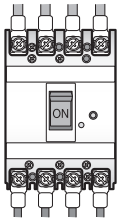
Using outdoor unit

Take away any covers or barriers.

▶ It may cause product failure and poor performance in cooling by blocking air flow.

Checking the auxiliary power switch

Turn on the auxiliary power switch which is installed separately.



NOTE

Auxiliary power switch (ELCB : Earth Leakage Circuit Breaker)

- Auxiliary power switch is not included in the package. Purchase and install it separately.
- Auxiliary power switch is a device for preventing over-current or short circuit. When not using the auxiliary power switch for a long time, it should be turned off.
- If ELB have already been installed in the switch box of the building, you don't need to install the auxiliary power switch.

Operational temperature and humidity range

When the air conditioner operates outside of temperature and humidity range indicated below, protective device may activate and stop the operation. Especially, do not operate the air conditioner when the temperature of the outdoor is below -15℃ since product can be damaged.

Mode	Indoor temperature	Outdoor temperature	Indoor humidity
Cool	21℃~32℃	21℃~52℃	Relative humidity 80% or less
Dry	21℃~32℃	21℃~52℃	-

▶ If the air conditioner operates in cooling mode for long period of time in high humidity area, dew may be formed.

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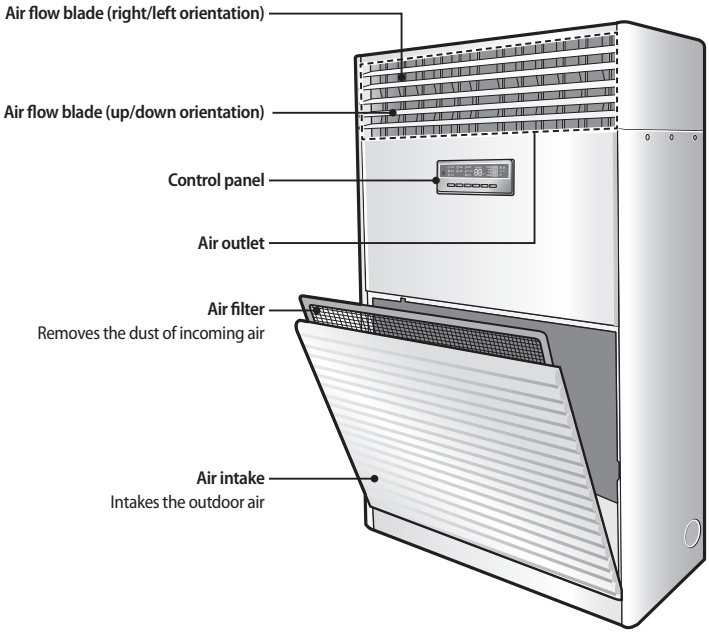
Viewing the parts

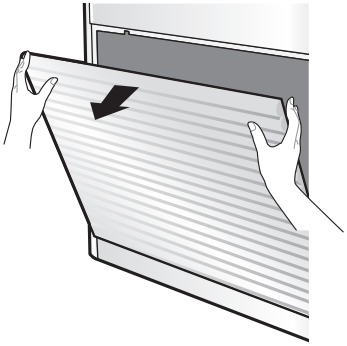
The picture and function of the indoor unit may different depending on the model.

Main parts



To open the panel

Hold the upper part of the panel, and then pull it slightly forward. Don't open the panel during the operation. It may cause a malfunction or an electrical hazard.



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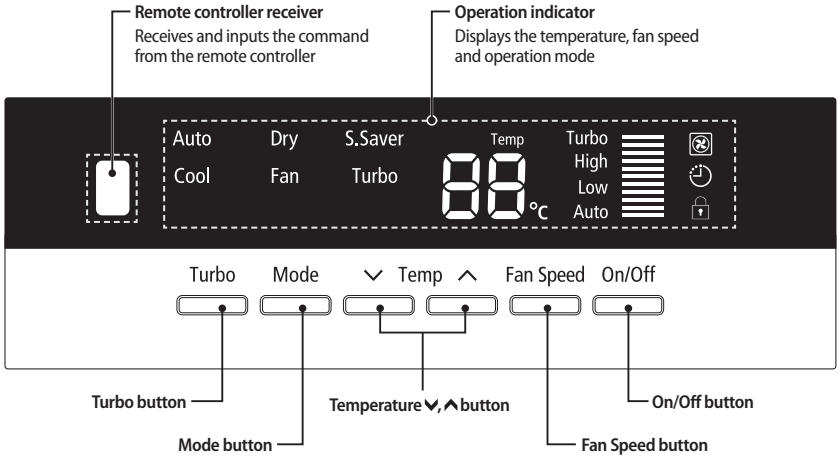
Control panel and the display

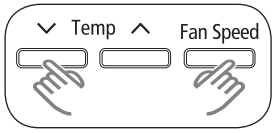


Locking the control panel

Whether the air conditioner is switched on or off, you cannot control the air conditioner with the control panel if this function is set.

Press the **Temp ∨** and **Fan Speed** buttons for 3 seconds.

- You will hear ring and the Lock icon will appear on the indoor unit display.
- Once Lock is set, you cannot control the air conditioner with the control panel but you can only control it with the remote controller. Therefore this function will be useful to keep the children away from touching the control panel.
- To unlock the control panel, press the **Temp ∨** and **Fan Speed** buttons again for 3 seconds.



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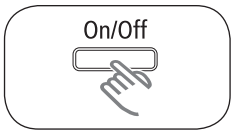
Using the air conditioner with the control panel

You can control the air conditioner without the remote controller.

1. Press the **On/Off** button on the indoor unit control panel.

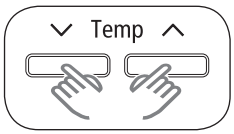
▶ The air conditioner will operate in Cool mode.

Stop To turn off the air conditioner, press the **On/Off** button again.



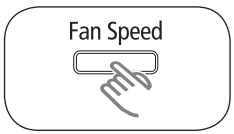
2. Press the **Temp** ∨ and ∧ button to adjust the temperature.

▶ You can increase/decrease the temperature by 1°C.



3. Press the **Fan Speed** button to adjust the fan speed.

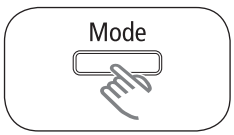
▶ Each time you press the **Fan Speed** button, the fan speed will change in order of (High) ▷ (Auto) ▷ (Low).



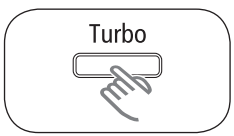
4. Press the **Mode** button to select the operation mode.

▶ You can select operation mode you want by pressing the **Mode** button.

▶ Each time you press the **Mode** button, the mode will change in order of Cool, Auto, Dry and Fan.



5. Press the **Turbo** button to select Turbo mode



NOTE

• General and duct type air conditioners may show different Fan speeds.

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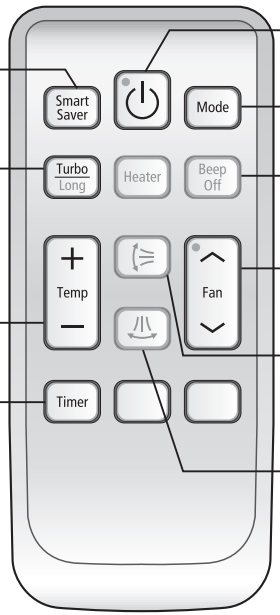
Checking the remote controller

The functions may be different depending on the model.

- ▶ You can activate the air conditioner by pointing the remote controller away from it. When using the remote controller, always point it directly at the air conditioner.
- ▶ When you press the button, a short ring will sound.

Remote controller button



Smart Saver
Keep the indoor air cool while saving the electricity.

Turbo/Long
Turbo – Set quick and powerful cooling.
Long – Set the long function to spread out the cool air further away.
(Not supported by this model)

Temperature
Adjusts the temperature.

Timer
Sets the timer to turn off the air conditioner

Power
Turn on/off the air conditioner. Turn on/off the air conditioner.

Mode
Set one of the 4 operation modes.

Beep Off
Turn off the beep sound.
(Not supported by this model)

Fan ▲, ▼
Adjusts the fan speed.

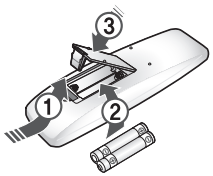
Air swing (Up/Down)
Activate/Deactivate air flow blade movement automatically up and down.
(Not supported by this model)

Air swing (Left/Right)
Activate/Deactivate air flow blade movement automatically right and left.
(Not supported by this model)

NOTE
- Long, Heater, Beep Off, Air swing(Up/Down, Left/Right) functions are not supported by this model.

Installing the batteries

1. Open the battery cover.
▶ Gently press the part on the battery cover and push it in the direction of the arrow.
2. Insert two AAA batteries.
▶ Check and match the "+" and "-" signs accordingly.
3. Close the cover.
▶ You should hear click sound when the cover is locked properly.



CAUTION
- Be careful not to get the remote controller wet.

NOTE
- The signal may not be received well of electronic lighting style fluorescent lampssuch as inverter fluorescent lamps are in the same space.
- If other electrical products operate by the remote controller, call your nearest contact center.

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Basic operation

Basic operation is the operation mode that can be selected by pressing the **Mode** button.

Cool

In Cool mode, indoor temperature and fan speed can be adjusted at your desire to cool your indoor room.

Auto

When setting the desired temperature of the air conditioner for your fresh environment, the operation mode will operate automatically according to the desired temperature and current temperature and control the fan speed in Auto mode.

Dry

In Dry mode, indoor humidity can be removed efficiently to refresh the humid indoor room.

▶ Switching the outdoor unit on or off will be repeated according to the temperature difference between current temperature and the desired temperature.

Fan

In Fan mode, the breeze will be generated just like the electric fan to provide natural indoor environment.

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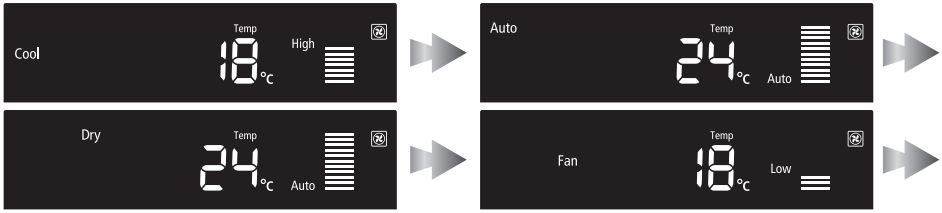
Press the **button to start the operation of the air conditioner.**

Press the

button to start the operation of the air conditioner.



▶ You can check the display on the indoor unit to make sure that you selected desired operation mode.

Press the

button to start the operation of the air conditioner.

Cool	▪ General type: ▄ (High), ▄ (Auto), ▁ (Low) ▪ Duct type: ▀ (Turbo), ▄ (Auto), ▄ (High)
Auto	▄ (Auto)
Dry	▄ (Auto)
Fan	▪ General type: ▁ (Low), ▄ (High) ▪ Duct type: ▄ (High), ▀ (Turbo)

Press the

button to adjust the desired temperature.

Cool	You can adjust the desired temperature by 1°C within the range of 18°C~30°C.
Auto	When desired temperature is adjusted, operation mode will change to Cool mode.
Dry	You can adjust the desired temperature by 1°C within the range of 18°C~30°C.
Fan	Desired temperature cannot be adjusted.

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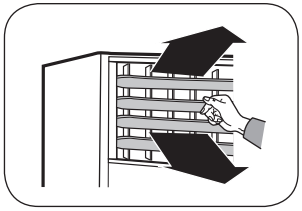
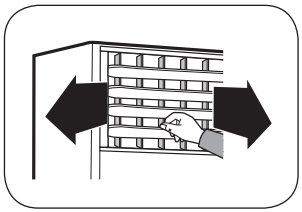
Adjusting the air flow direction

Air flow can be directed to your desired position.

Hold the Air flow blade (up/down orientation) and adjust the up/down direction.



Hold the Air flow blade (left/right orientation) and adjust the left/right direction.



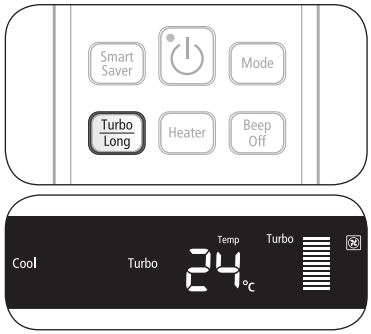
Turbo operation

Turbo operation function provides you with quick and powerful cooling.

Press the Turbo/Long button to select the Turbo operation.

▶ Turbo will be displayed on the indoor unit display and the Turbo operation will operate for 30 minutes.

Cancel Press the **Turbo/Long** button again.



NOTE

- Turbo operation can be selected in Auto, Cool mode.
- Turbo operation and Smart saver operation cannot be selected at the same time.
- Desired temperature and fan speed cannot be adjusted.

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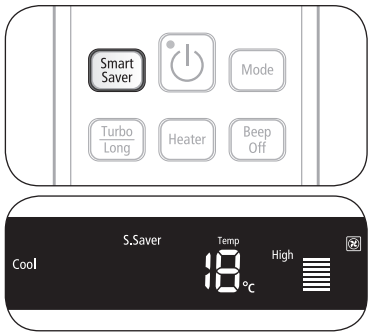
Smart saver operation

Smart saver operation reduces your power consumption and save money on your electric bill.

Press the Smart Saver button to select the Smart saver operation.

- S.Saver will be displayed on the indoor unit display and the Smart saver operation will begin.

Cancel Press the **Smart Saver** button again.



NOTE

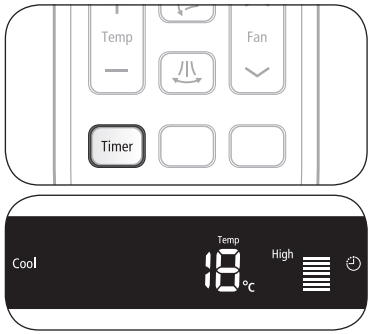
- Smart saver operation can be selected in Cool mode only.
- When Smart saver operation is activated, temperature range will be limited to 18°C~30°C.
- Temperature/Fan speed can also be adjusted.
- Smart saver operation and Turbo operation cannot be selected at the same time.

Timer function

You can turn the air conditioner off at your desired time.

Press the Timer button when the air conditioner is on.

- icon will be displayed on the indoor unit display.
- Time will be set in hourly unit from 1~12hours.
- Current temperature will be displayed after 5 seconds.
- If you want to cancel the Timer function, press the **Timer** button until you set the time to 12 hours and press it one more time. icon and the set time will disappear.



NOTE

- Timer function can be set only when the air conditioner is on.

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Cleaning and maintaining the air conditioner

CAUTION
- Make sure to turn off the auxiliary power switch or unplug the power plug when cleaning the air conditioner.

Cleaning the indoor unit

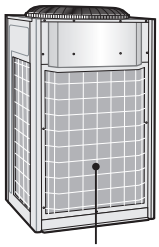
- ▶ Wipe the surface of the unit with a slightly wet or dry cloth when needed.
- ▶ Brush away the dust on the narrow gap of air conditioner.

NOTE
- If it is difficult to clean the indoor unit heat exchanger on your own, contact service center.
- Depending on the usage environment(restaurant, hair salon etc.), odor may be generated. Prevent the odor by cleaning the air filter or performing Fan mode while ventilating your room. If you have a problem with the odor, contact a service center.

CAUTION
- Do not clean the control panel with alkaline detergent.
- Do not clean the surface with sulfuric acid, hydrochloric acid or organic solvent (thinner, kerosene, acetone) or attach stickers. It may damage the surface of the unit.

Cleaning the outdoor unit heat exchanger

- ▶ When dust accumulates on the heat exchanger, it may decrease cooling performance. Therefore, clean it regularly.
- ▶ Spray water to clean the dust.



Heat exchanger
(Illustration may differ slightly depending on the models.)

NOTE
- If it is too difficult to clean the outdoor unit heat exchanger on your own, contact service center.

CAUTION
- Be careful with the sharp edges on the outdoor unit heat exchanger.

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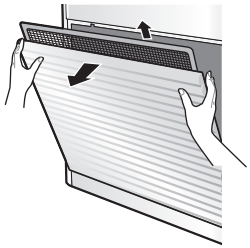
Cleaning the air filter

Washable air filter captures large particles from the air. The filter can be cleaned with a vacuum or by hand washing.

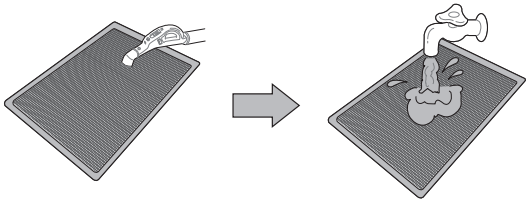
1. Open the panel and pull out the air filter.

▶ Pull out the air filter in the direction of the arrow as shown in the below figure.



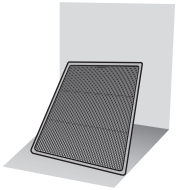
2. Clean the air filter with a vacuum cleaner or in running water.

▶ If dust is too heavy, use warm water mixed with detergent. Do not scrub the filter too hard since it may get damaged.

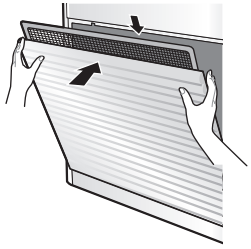


3. Dry the air filter in a ventilated area.

▶ Do not dry the air filter in a place with direct sunlight.



4. Insert the air filter back in its original position. Make sure it is firmly fixed.



NOTE

- Clean the air filter every two weeks. Cleaning term may differ depending on usage and environmental conditions therefore if you are using the air conditioner in dusty area, clean the air filter every week.

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Cleaning and maintaining the air conditioner

Maintaining the air conditioner

If the air conditioner will not be used for an extended period of time, dry the air conditioner to maintain it in best condition.

1. Dry the air conditioner thoroughly by operating in Fan mode for 3 to 4 hours and turn off the circuit breaker. There may be internal damage if moisture is left in components.
2. Before using the air conditioner again, dry the inner components of the air conditioner again by running in Fan mode for 3 to 4 hours. This helps remove odors which may have generated from dampness.

Periodical checks

Refer to the following chart to maintain the air conditioner properly.

Type	Description	Every 2 weeks	Every 3 months	Every 4 months	Once a year
Indoor unit	Clean the air filter (1)	●			
	Clean the condensate drain pan (2)				●
	Thoroughly clean the heat exchanger (2)				●
	Clean the condensate drain pipe (2)			●	
Outdoor unit	Clean the heat exchanger on the outside of the unit (2)			●	
	Clean the heat exchanger on the inside of the unit (2)				●
	Clean the electric components with jets of air (2)				●
	Verify that all the electric components are firmly tightened (2)				●
	Clean the fan (2)				●
	Verify that all the fan assembly is firmly tightened (2)				●
	Clean the condensate drain pan (2)				●

● : This check mark requires checking the indoor/outdoor unit periodically, following to the description to maintain the air conditioner properly.

NOTE

- The checks and maintenance operations described are essential to guarantee the efficiency of the air conditioner. The frequency of these operations varies according to the characteristics of the area, the amount of dust, etc.
  (1) The described operations should be performed more frequently if the area of installation is very dusty.
  (2) These operations must always be performed by qualified personnel. For more detailed information, see the Installation part.

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Troubleshooting

Refer to following chart if the air conditioner operates abnormally. This may save time and unnecessary expenses.

PROBLEM	SOLUTION
The air conditioner does not work at all.	• Check power status and then operate the air conditioner again. • Check whether the power plug is connected correctly or the auxiliary power switch is switched on. • If the air conditioner is switched off by the Timer function, press the **On/Off** button.
The temperature adjustment is not working.	• Temperature adjustment is not available when the Fan mode is selected.
Fan speed adjustment is not working.	• Check if you have selected Auto/Dry/Turbo mode. In these modes, fan speed is set to Auto and you cannot adjust the fan speed.
Remote controller does not work.	• Replace the exhausted batteries with new ones. • Do not block the remote controller receiver. • If the remote controller is used near strong light(3-wavelength fluorescent light, neon sign etc.), the remote controller may not work due to the electronic jamming signal
Cool air does not come out of the air conditioner.	• Check if the set temperature is higher than the current temperature. Press the **Temp** + or - button on the remote controller to set the temperature lower than the current temperature. • Check if you have selected Fan mode. In this mode, Cool air will not come out in Fan mode therefore select Auto/Cool/Dry mode. • Check if the air filter is blocked by dirt. If there is a lot of dust on the Air filter, cooling performance may decrease. Clean them frequently. • Check if the outdoor unit is covered or installed near the obstacle. Take the cover off and take the obstacle away. • Check if the indoor unit is installed in a place with direct sunlight. Close the curtain or blind to cover the sunlight. • If the doors or windows are open, it may cause bad cooling performance. Close the doors and windows. • If the air conditioner has just been turned on or the indoor temperature reaches the desired temperature, only fan will operate around 3 minutes for the product protection. • Check if the pipe length is too long. When the pipe length exceeds maximum allowable pipe length, cooling performance may decrease.

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Troubleshooting

PROBLEM	SOLUTION
Timer function is not working.	• Check if the air conditioner is off. Turn the air conditioner on and set the Timer function. • When the timer is already set icon will appear on the indoor unit display, check to see if the timer is already set.
Odors permeate in the room during operation.	• Odor may permeate depending on the surrounding environment or operating condition. Ventilate the indoor air or operate Fan mode for 1~2 hours if the odor does not go away. (Parts of the air conditioner does not generate any odor) • Clean the air filter if it is dirty.
Error is indicated.	• If the message E101, E103, E121, E122, E162, E185, E193, E194, E221, E256, E416, E425, E451, E453, E454, E455, E456, E457, E460 blink on the indoor unit display, it means there is a problem so you should contact a service center.
Noise is generated.	• Depending on the status of the air conditioner usage (especially when the outdoor temperature is below 20°C), noise can be generated due to changes in refrigerant flow. You don't have to worry since it is normal.
Water is dropping from the connection part of the drain pipe.	• Water may be generated because of the temperature difference. It is normal.
Indoor unit display is blinking.	• Press the **On/Off** button and check if the display keeps blinking. • Turn off the auxiliary power switch and turn it on. • If the display keeps blinking after following above 2 instructions, contact the service center.
Heat is generated from the control panel on the indoor unit.	• When the air conditioner is on, little bit of heat may be generated from the control panel. It is normal.
Air conditioner is not turning off.	• After turning off the air conditioner, it may generate breeze for certain period of time for defrosting. It is normal.

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Safety precautions

Carefully follow the precautions listed below because they are essential to guarantee the safety of the equipment.

WARNING

- Always disconnect the air conditioner from the power supply before servicing it or accessing its internal components.
- Verify that installation and testing operations are performed by qualified personnel.
- Verify that the air conditioner is not installed in an easily accessible area.

General information

- Carefully read the content of this manual before installing the air conditioner and store the manual in a safe place in order to be able to use it as reference after installation.
- For maximum safety, installers should always carefully read the following warnings.
- Store the manual in a safe location and remember to hand it over to the new owner if the air conditioner is sold or transferred.
- This manual explains how to install an indoor unit with a split system with two SAMSUNG units. The use of other types of units with different control systems may damage the units and invalidate the warranty. The manufacturer shall not be responsible for damages arising from the use of non compliant units.
- The manufacturer shall not be responsible for damage originating from unauthorized changes or the improper connection of electric and hydraulic lines. Failure to comply with these instructions or to comply with the requirements set forth in the "Operating limits" table, included in the manual, shall immediately invalidate the warranty.
- The air conditioner should be used only for the applications for which it has been designed: the indoor unit is not suitable to be installed in areas used for laundry.
- Do not use the units if damaged. If problems occur, switch the unit off and disconnect it from the power supply.
- In order to prevent electric shocks, fires or injuries, always stop the unit, disable the protection switch and contact SAMSUNG's technical support if the unit produces smoke, if the power cable is hot or damaged or if the unit is very noisy.
- Always remember to inspect the unit, electric connections, refrigerant tubes and protections regularly. These operations should be performed by qualified personnel only.
- The unit contains moving parts, which should always be kept out of the reach of children.
- Do not attempt to repair, move, alter or reinstall the unit. If performed by unauthorized personnel, these operations may cause electric shocks or fires.
- Do not place containers with liquids or other objects on the unit.
- All the materials used for the manufacture and packaging of the air conditioner are recyclable.
- The packing material and exhaust batteries of the remote controller(optional) must be disposed of in accordance with current laws.
- The air conditioner contains a refrigerant that has to be disposed of as special waste. At the end of its life cycle, the air conditioner must be disposed of in authorized centers or returned to the retailer so that it can be disposed of correctly and safely.

Installing the unit

IMPORTANT: When installing the unit, always remember to connect first the refrigerant tubes, then the electrical lines. Always disassemble the electric lines before the refrigerant tubes.

- Upon receipt, inspect the product to verify that it has not been damaged during transport. If the product appears damaged, DO NOT INSTALL it and immediately report the damage to the carrier or retailer (if the installer or the authorized technician has collected the material from the retailer.)

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Safety precautions

- After completing the installation, always carry out a functional test and provide the instructions on how to operate the air conditioner to the user.
- Do not use the air conditioner in environments with hazardous substances or close to equipment that release free flames to avoid the occurrence of fires, explosions or injuries.
- Our units must be installed in compliance with the spaces indicated in the manual to ensure either accessibility from both sides or ability to perform routine maintenance and repairs. The units' components must be accessible and that can be disassembled in conditions of complete safety either for people or things. For this reason, where it is not observed as indicated into the manual, the cost necessary to reach and repair the unit (in safety, as required by current regulations in force) with slings, trucks, scaffolding or any other means of elevation won't be considered in-warranty and charged to end user.

Power supply line, fuse or circuit breaker

- Always make sure that the power supply is compliant with current safety standards. Always install the air conditioner in compliance with current local safety standards.
- Always verify that a suitable grounding connection is available.
- Verify that the voltage and frequency of the power supply comply with the specifications and that the installed power is sufficient to ensure the operation of any other domestic appliance connected to the same electric lines.
- Always verify that the cut-off and protection switches are suitably dimensioned.
- Verify that the air conditioner is connected to the power supply in accordance with the instructions provided in the wiring diagram included in the manual.
- Always verify that electric connections (cable entry, section of leads, protections…) are compliant with the electric specifications and with the instructions provided in the wiring scheme. Always verify that all connections comply with the standards applicable to the installation of air conditioners.

CAUTION

- Make sure that you earth the cables.
  - Do not connect the earth wire to the gas pipe, water pipe, lighting rod or telephone wire. If earthing is not complete, electric shock or fire may occur.
- Install the circuit breaker.
  - If the circuit breaker is not installed, electric shock or fire may occur.
- Make sure that the condensed water dripping from the drain hose runs out properly and safely.
- Install the power cable and communication cable of the indoor and outdoor unit at least 1m away from the electric appliance.
- Install the indoor unit away from lighting apparatus using the ballast.
  - If you use the wireless remote controller, reception error may occur due to the ballast of the lighting apparatus.
- Do not install the air conditioner in following places.
  - Place where there is mineral oil or arsenic acid. Resin parts flame and the accessories may drop or water may leak. The capacity of the heat exchanger may reduce or the air conditioner may be out of order.
  - The place where corrosive gas such as sulfurous acid gas generates from the vent pipe or air outlet. The copper pipe or connection pipe may corrode and refrigerant may leak.
  - The place where there is a machine that generates electromagnetic waves. The air conditioner may not operate normally due to control system.
  - The place where there is a danger of existing combustible gas, carbon fiber or flammable dust. The place where thinner or gasoline is handled. Gas may leak and it may cause fire.

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Preparation for installation

You must check the model names of the indoor and outdoor units.

Indoor · outdoor unit type and combination

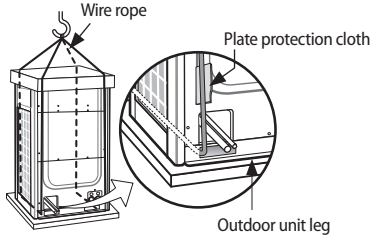
Capacity(Btu/h)	Type	Model name
75k	Indoor unit	AP80S0✳N
	Outdoor unit	AP80S0✳X
96k	Indoor unit	AP0AS0✳N
	Outdoor unit	AP0AS0✳X

Moving the outdoor unit

- ▶ Select the moving route in advance.
- ▶ Be sure that moving route is safe from weight of the outdoor unit.
- ▶ Do not slant the product more than 30° when carrying it. (Do not lay the product down sideways.)
- ▶ The surface of the heat exchanger is sharp. Be careful not to get injured during moving and installing the product.

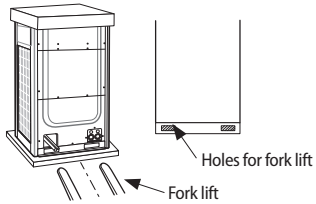
When moving with a crane

- Fasten the wire rope as shown in the figure.
- To protect damage or scratches, insert a piece of cloth between the outdoor unit and the wire rope.



When moving with a fork lift

- Insert the fork into the holes at the bottom of the outdoor unit carefully.
- Be careful that the fork does not damage the outdoor unit.



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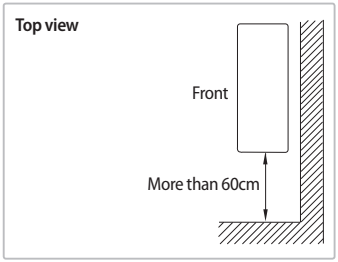
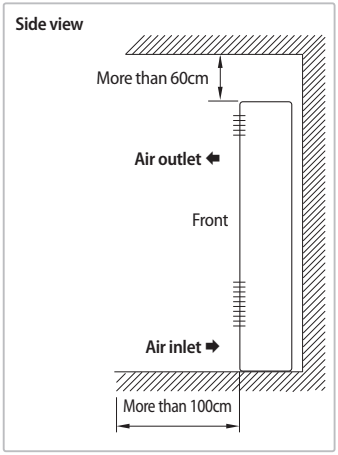
Deciding on where to install the product

Indoor unit

- Install the unit at a place close to the wall facing the outside as it is necessary to perform piping connection with the outdoor unit.
  - It is effective to install the unit at a window side to ensure uniform distribution of indoor temperature.
- Install the unit at a place where there is no obstacle against the wind around the air intake and air outlet.
- Install the unit horizontally at a stable, rigid place. (When installing the unit at a place subjected to oscillation, noise may occur.)
- Avoid a place near the door which is frequented by people.
- Avoid a place subject to direct sunlight.
- Avoid a place with high humidity. Dew may form during cooling operation. (Near kitchen)





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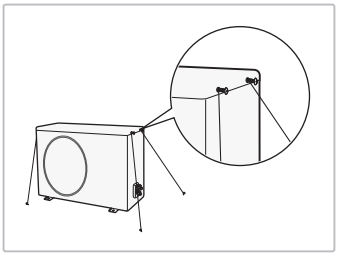
Outdoor unit

- Avoid a place that may disturb your neighbor. Noise may occur from the outdoor unit and the discharged air may run into the neighborhood. (Be careful of the operation time in a residential area.)
- Install the outdoor unit on a hard and even area that can withstand the vibration and its weight.
- Choose a flat place where rainwater does not settle or leak.
- Choose a place that will avoid strong winds.
- Choose a place that is well ventilated and allows enough space for repairs and service. (Discharge duct can be purchased privately.)
- Choose a place where the connection of refrigerant pipe between an indoor unit and outdoor unit is within allowed distance.
- Place where condensed water dripping from the drain hose can run out properly and safely.
- Choose a place where flammable gas does not leak.
- Avoid a place exposed to direct sunlight.
- Choose a place where the unit could not come into contact with snow and rain.
- For repair services and the ventilation, secure service area as shown in the figure.
- If there isn't enough installation space, service person can get injured and it may also cause product failure.
- If you need to ensure the outdoor unit from falling, use wires to fix it firmly.
  - Loosen the 4 screws from the top cover of the outdoor unit.
  - Put the wire around the screws and fasten the screws.
  - Fix the wire on the ground.

  CAUTION
  - When the outdoor unit is not firmly fixed, it may fall and cause personal injury or property damage.
  - When the outdoor unit is installed in water-proofed rooftop, fix the wires on the wall.



- Do not install the outdoor unit at an unstable places (such as rooftop). If installation is unavoidable, make sure that you fix the unit firmly. Avoid places where strong wind or storm can possibly knock down the product (such as seashore or place with frequent storm).

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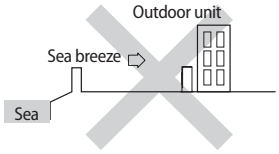
Deciding on where to install the product

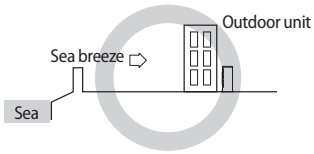
Selecting appropriate location for installation

Decide the installation location based on the following condition and obtain the user's approval.

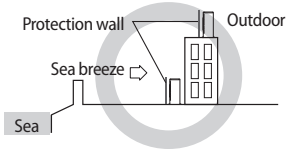
- ▶ Avoid a place that may disturb your neighbor. Noise may occur from the outdoor unit and the discharged air may run into the neighborhood. (Be careful of the operation time in a residential area)
- ▶ Install the outdoor unit on a hard and even area that can support its weight.
- ▶ Choose a flat place that rainwater does not settle or leak.
- ▶ Choose a place avoiding strong winds.
- ▶ Maintain sufficient space for repairs and service.
- ▶ Choose a place where you can easily connect the pipes and cables to the indoor unit.
- ▶ Make sure that the condensed water dripping from the drain hose runs out properly and safely.
- ▶ When installing the outdoor unit near seashore, make sure it is not directly exposed to sea breeze. If you can not find a adequate place without direct sea breeze, protection wall should be constructed.

▶ Install the outdoor unit in a place (such as near buildings etc.) where it can be prevented from sea breeze which can damage the outdoor unit.





▶ If you cannot avoid installing the outdoor unit by the seashore, construct a protection wall around to block the sea breeze.



- Protection wall should be constructed with a solid material such as concrete to block the sea breeze and the height and the width of the wall should be 1.5 times larger than the size of the outdoor unit. Also, secure over 700mm between the protection wall and the outdoor unit for exhausted air to ventilate.

▶ Install the outdoor unit in a place where water can drain smoothly.

✳ If you cannot find a place satisfying above conditions, please contact manufacturer. Make sure to clean the sea water and the dust on the outdoor unit heat exchanger and spread corrosion inhibitor on heat exchanger. (At least one time per one year.)

- ▶ Choose a place where there is no direct sunlight.
- ▶ Choose a place where it could not come into contact with snow and rain.
- ▶ Choose a place where flammable gas does not leak.
- ▶ Choose a place where the indoor and outdoor unit can be connected with a pipe.
- ▶ Choose a place where there is no direct sunlight.
- ▶ Choose a place where it could not come into contact with snow and rain.
- ▶ Choose a place where flammable gas does not leak.
- ▶ Choose a place where the indoor and outdoor unit can be connected with a pipe.

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WARNING

- After installing the outdoor unit, apply rust inhibitor on the internal pipes and heat exchanger.
  - If you don't apply rust inhibitor, airborne corrosive gas (such as sulfur compounds, hydrogen sulfide and ammonia) and salty dust may cause pipe corrosion which will lead to refrigerant leakage.
  - Inspect the outdoor unit at least once a year and re-apply the rust inhibitor where it is damaged (worn out).
- When applying the rust inhibitor, please be aware of the following:
  - Turn off the power before spraying the rust inhibitor.
  - Wear protective goggles and mask before spraying.
  - Clean the dusty surface with clean fabric or paper before spraying.
  - Make sure that wind is blowing from worker's back when spraying.
  - Do not spray on the PCB panel and electric parts.

CAUTION

- Install the indoor unit away from any interfering sources such as radio, computer, stereo equipment and also select the place where the electrical wiring work can be possible.
  - Especially keep the unit at least 3m away from the electrical equipment in an area electromagnetic waves generated and install the protection tube to protect the main power cable and communication cable.
  - Make sure that there is no equipment electromagnetic waves generate. If not, malfunction of the control system may occur due to the effect of the electromagnetic wave. (For example: The remote control sensor of the indoor unit may not be received well of electronic lighting style fluorescent lamps, such as fluorescent lamps are in the same space when using a remote control.)
- Make sure to install the outdoor unit in a safe place where snowfall will not be obstructed. The frame should be installed in a place where the air inlet and heat exchanger of the unit are not buried in the snow.
- A ventilation system may be required in the case the outdoor unit is installed in a closed space or room, even though R410a is not poisonous or flammable.
- Install the railing around the outdoor unit to prevent falling when the unit is installed at high place of roof on the building.
- Avoid installing the units in places such as an exhaust pipe and ventilating opening exposed to corrosive gas, oxides of sulfur, ammonia gas or sulfur gas herbicides. (These places need additional anticorrosive treatments. Please contact manufacture to avoid corroding copper pipes or soldered parts)
- According to the condition of power supply, electric noise or unstable voltage can occur malfunction of electric parts or control system. (At the ship or places using power supply from electric generator… etc)

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Deciding on where to install the product

Space requirements

- The space suggested below is based on operating condition of outdoor temperature of 35°C. If operating condition of outdoor temperature is higher than 35°C, try to have more space.
- Make sure to clear a passage for a person and air flow.
- Observe the clearances and dimensions as seen below when installing the outdoor unit.
- If you install several outdoor units at the same place, observe the space for ventilation and free airflow.
- If the space for ventilation is insufficient, the air conditioner may not generate performance designed. Keep in mind that SAMSUNG logo is located on the front side of outdoor unit.

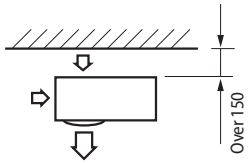
AP80S0✳X

❖ **When there are no tall obstacles around the outdoor unit.**

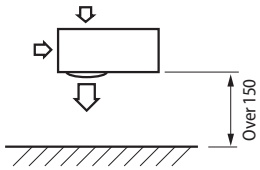
- Maximum height of the obstacle: Front – Below 1500mm / Air inlet – Below 500mm / Side – when there is no height limit.

(Unit: mm)

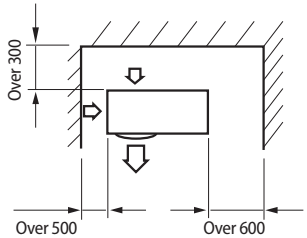
✳ When the air outlet is opposite the wall



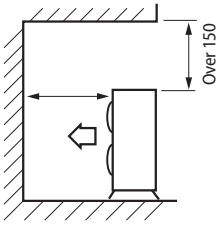
✳ When the air outlet is towards the wall



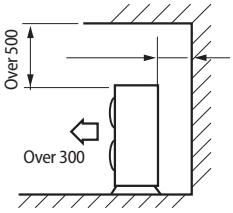
✳ When 3 sides of the outdoor unit are blocked by the wall



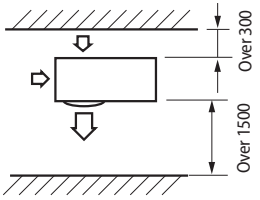
✳ When the upper part of the outdoor unit and the air outlet is towards the wall



✳ When the upper part of the outdoor unit and the air outlet is opposite the wall



✳ When front and rear side of the outdoor unit is towards the wall



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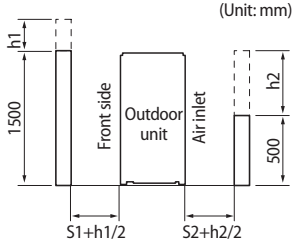
❖ When there is tall obstacle around the outdoor unit

- ▶ If the obstacle in the front side of the outdoor unit exceeds 1500mm, half of the exceeding height (h1/2) must be added to the space in front of the outdoor unit (S1).
- ▶ If the obstacle in front of the air inlet side exceeds 50mm, half of the exceeding height (h2/2) must be added to the space in the air inlet side (S2).

(Unit: mm)



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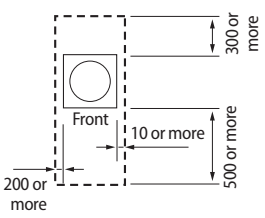
❖ When there are no tall obstacles around the outdoor unit

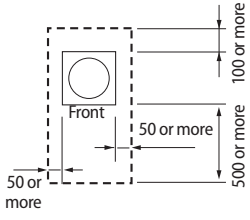
Wall height restricted
Wall height unrestricted

✻ When installing 1 outdoor unit

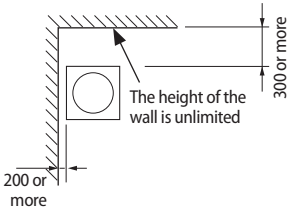
(Unit: mm)



<Case 1>



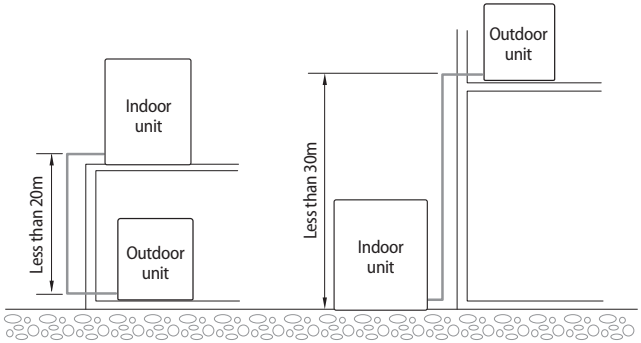
<Case 2>



<Case 3>

Pipe length between the indoor and the outdoor unit

- ▶ If the pipe is lengthened, the performance of the unit is degraded, and the service life is shortened. Therefore, the pipe length should be as short as possible.
  - Allowable pipe length: Maximum 50m
  - Allowable pipe height difference:
    When outdoor unit is installed higher level than indoor unit: Maximum 30m
    When indoor unit is installed higher level than indoor unit: Maximum 20m
- ▶ Choose a installation place where you can limit the pipe bending to less than 10.



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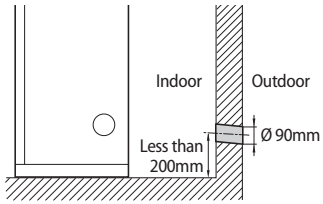
Deciding on where to install the product

Drilling a hole in the wall

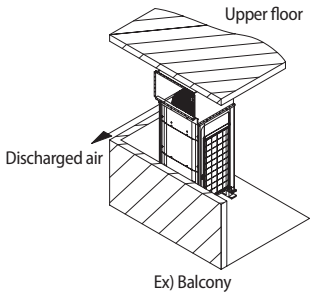
▶ Drill a hole of a 90mm in diameter at a less than 200mm in height from the bottom of the indoor unit in a slightly downward slope.

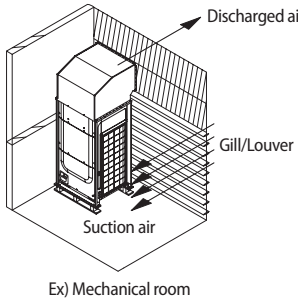


Preparing the installation

Installing duct for horizontal exhaust discharge

It is necessary to install an air-discharge duct(field supply) to direct exhaust from the fan horizontally if it is difficult to provide a minimum space of 2m between the air-discharge duct outlet and a nearby obstacle as shown in the figure.



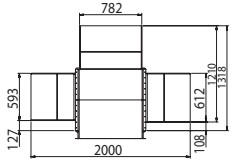


Installing the outdoor unit in harsh environments

In abnormally harsh environments such as windy areas, sufficient countermeasures to guard against excessive wind should be taken to ensure the unit's correct operation.

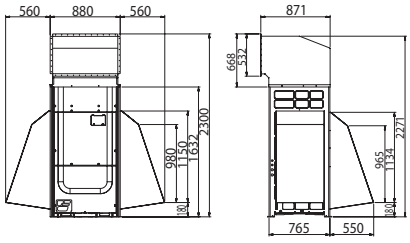
❖ **When installing ducts**

- The frame/foundation shall be made of angle steel, etc., and designed so that wind slip through the structure.
- Install unit so that wind will not directly lash against openings of inlet and outlet ducts.



CAUTION

- The foundation must be solid and the unit must be secured with anchor bolts.
- Be sure to install unit in a place strong enough to withstand its weight. When installing on a roof subject to strong wind, countermeasures must be taken to prevent the unit from being overturned.
- Be sure to install unit in a place strong enough to withstand its weight.



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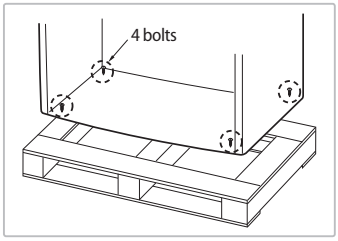
Base construction and installation of the indoor · outdoor unit

Installing indoor unit

1. Open the air inlet grille in the front and unscrew 4 bolts on the bottom of the product.
2. Remove the wooden palette used for product transport.
3. Install the product on an even floor.



Installing outdoor unit

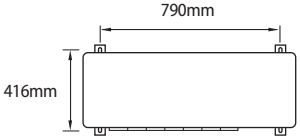
AP80S0✳X

▶ Remove the wooden palette used for product transport.

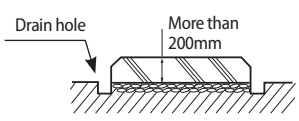
- To prevent vibration and noise, fix the outdoor unit firmly and check that base ground is hard enough without any sloped surface. (Fix the outdoor unit with M10 bolts, nuts, and washers.)
- Appropriate length of the bolt must be over 20mm from the surface of the base ground.
- When constructing base ground, it must support the outdoor unit within below dimensions.
- When the base ground construction is completed, install anti-vibration pad or frame between the base ground and the bottom of the outdoor unit to prevent the vibration noise from transferring through the base ground.

❖ **Anchor bolt fixing dimensions**

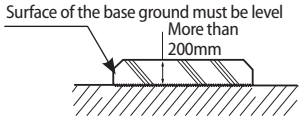
Fix the unit on a flat, rigid floor using the anchor bolt. (Anchor bolt: M10 x 4 points – separately purchased)



❖ **Base ground work**



<When installing on the ground>

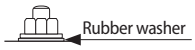


<When installing on the roof>

CAUTION

When tightening the anchor bolt

- Tighten the rubber washer to prevent the outdoor unit bolt connection part from corroding.



When connecting pipes

- Check the strength of the roof to install the outdoor unit and make sure to have a waterproof floor of the roof.
- Make sure that a proper drainage system has been put in place around the outdoor unit. (Condensed or defrost water may be generated during outdoor unit operation.)

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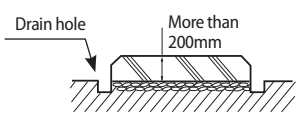
Base construction and installation of the indoor · outdoor unit

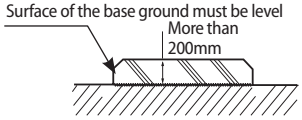
AP0AS0✳X

- ▶ Remove the wooden palette used for product transport.
- ▶ Fix the outdoor unit firmly on the base ground with anchor bolts.
- ▶ The manufacturer is not responsible for the damage occurred by not keeping standard of the installation.
  - To protect the outdoor unit from outdoor conditions (such as rain etc), make sure to construct the base ground that is higher than 200mm and construct the drain hole to connect the pipe to the drainage.
  - Considering the vibration and weight of the outdoor unit, strength of the base ground must be strong and it has to be flat so that rainwater does not settle or leak.
  - Base ground should be 1.5 times larger than bottom of the outdoor unit.
  - Firmly fix the outdoor unit so that it can withstand the wind speed at over 30m/s. In case that the outdoor unit cannot be fixed on the ground, fix the side of the outdoor unit or use extra structure to fix it.
  - You must pay extra attention on waterproofing and constructing drainage on the ground where outdoor unit will be installed since condensed water will be generated during heating operation. (Condensed water may freeze in winter time and form icy ground.)
  - It is necessary to install wire mesh or steel bar during concrete construction for the base ground to prevent damages or cracks.
  - When the base ground construction is completed, install anti-vibration pad or frame between the base ground and the bottom of the outdoor unit to prevent the vibration noise from transferring through the base ground.

❖ Base ground work



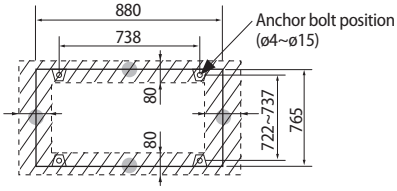
<When installing on the ground>



<When installing on the roof>

❖ Outdoor unit base mount and anchor bolt position

(Unit: mm)



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Refrigerant piping work

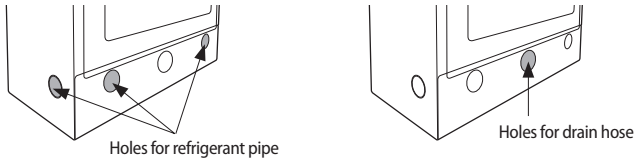
WARNING
- When installing, make sure there is no leakage. When recovering the refrigerant, ground the compressor before removing the connection pipe.
- If the refrigerant pipe is not properly connected and the compressor works with the service valve open, the pipe inhales the air and it makes the pressure inside of the refrigerant cycle abnormally high and it may cause explosion and injury.

- ▶ Try to keep the length of the refrigerant pipe as short as possible and make sure to minimize the height difference between the indoor and outdoor unit.
- ▶ The piping length between the outdoor unit and the indoor unit may not exceed the allowable piping length and height difference.
- ▶ Use only certified refrigerant pipe and follow the installation method.
- ▶ After completing the pipe installation, measure the length of the pipe to see whether or not you need to charge additional refrigerant. If you do, you must use R22 refrigerant.
- ▶ Use clean refrigerant pipe with no harmful ion, oxide, dust, iron content or moisture inside pipe.

Connecting the pipes

1. There are holes for refrigerant pipes on the left, right and rear side of the indoor unit and you may choose any one of the holes depending on your installation location. Choose a side for the easier pipe connection. You may connect the drain hose through the hole in the middle part of the rear side on the indoor unit.

CAUTION
- Do not use a hammer, but use a cutter to cut the notch.



2. Pipe installation condition may vary depending on the installation location. Therefore, use indoor and outdoor unit elbow pipe connector to install the pipe if necessary.
   - Allowable pipe length: Maximum 50m
   - Allowable pipe height difference: Maximum 20~30m
   - Make sure that there are less than 10 bending points in a pipe.
   - During initial installation, fill the additional refrigerant if the pipe length exceeds 5 m.
   - For every 1 m of exceeding pipe length, fill additional refrigerant as stated below.

Model	Refrigerant amount	
	Basic (g)	Additional (g/m)
AP0AS0A✳✳✳	6,500	80
AP80S0A✳✳✳	4,500	80

Ex) If total piping length is 30 m,

6,500 g (standard filling amount for 5 m pipe): Factory default (AP0AS0A✳✳✳)

2,000 g {80 g/m x (30 m – 5 m)}: Additional refrigerant amount

(Fill during the installation)

8,500 g: Total amount of refrigerant filling

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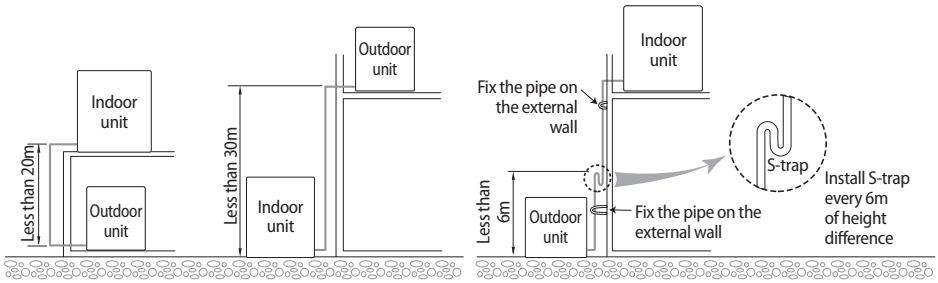
Refrigerant piping work

CAUTION

- If the pipe is lengthened, the performance of the unit is degraded, and the service life is shortened. Therefore, try to keep the pipe length as short as possible.
- You must install 1 S-trap on the gas side pipe up to 6m of height difference.
- If the height difference of the pipe exceeds 6m, install S-trap every 6m.



Outdoor unit pipe connection

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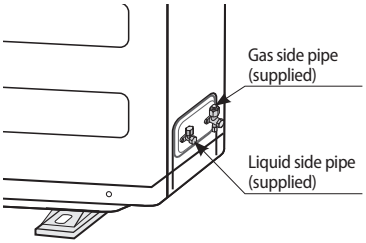
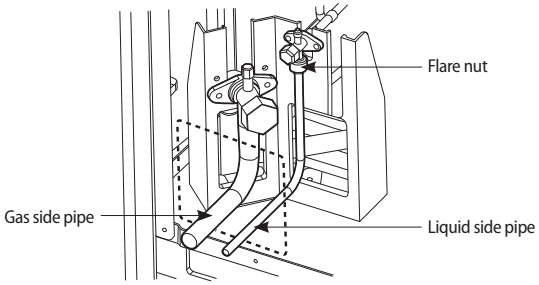


AP0AS0✳X



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Selecting refrigerant pipe

Model name	Liquid side (mm)	Gas side (mm)
AP80S0✳X	Ø12.70	Ø25.4
AP0AS0✳X	Ø12.70	Ø25.4

Temper grade and minimum thickness of the refrigerant pipe

Outer diameter [mm/(inch)]	Minimum thickness (mm)	Temper grade
Ø 6.35 (1/4)	0.7	C1220T-O (Soft)
Ø 9.52 (3/8)	0.7	
Ø 12.70 (1/2)	0.8	
Ø 15.88 (5/8)	0.8	
Ø 19.05 (3/4)	1.0	
Ø 22.23 (7/8)	0.9	C1220T-1/2H (Semi-soft) or C1220T-H (Soft)
Ø 25.40 (1)	1.0	
Ø 28.58 (1-1/8)	1.1	
Ø 31.75 (1-1/4)	1.1	
Ø 38.10 (1-1/2)	1.35	
Ø 44.45 (1-3/4)	1.6	
Ø 50.80 (2)	2.0	

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Refrigerant piping work

Storing refrigerant pipe

To prevent foreign materials or water from entering the pipe, it is important to keep the refrigerant pipe sealed in clean and dry condition during installation. Apply correct sealing method depending on the environment.

Stored place	Stored time	Sealing type
Outside	Longer than one month	Pipe pinch
	Shorter than one month	Taping
Inside	-	Taping

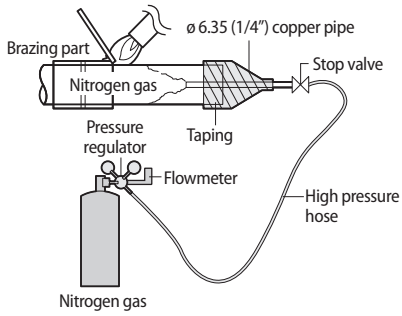
Refrigerant pipe brazing and safety information

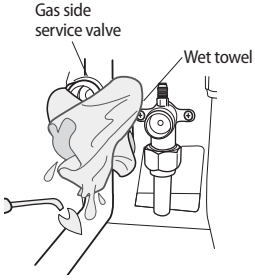
Important information for refrigerant pipe work

- Make sure that there is no moisture inside the pipe.
- Make sure that there are no foreign materials and impurities in the pipe.
- Make sure that there is no leak.
- Make sure to follow the instruction when brazing and keeping the pipe.

Nitrogen flushing brazing

- Use nitrogen gas when brazing the pipes as shown in the picture.
- If you do not perform nitrogen flushing when brazing the pipes, oxide may form inside the pipe. It can cause the damage of the important parts such as compressor, valves.
- Adjust the flow rate of the nitrogen flushing with a pressure regulator to maintain 0.05m³/h or less.
- Wrap the bottom side of the service valve with a wet cloth and weld it as shown in the figure. Since water will evaporate during welding, pour some water time to time. If not, O-ring and packing inside the service valve may get damaged by a welding fire and cause critical leakage.





Direction of the pipe when brazing

- Brazing the pipe should be done with the pipe headed downward or horizontally.
- Avoid brazing with the pipe headed upward.

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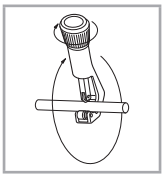
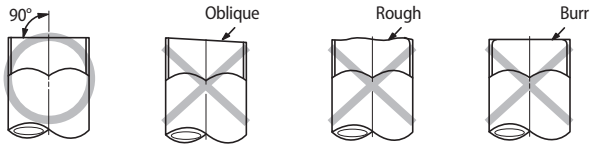
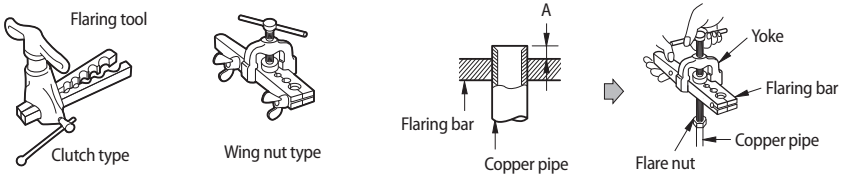
Cutting or flaring the pipes

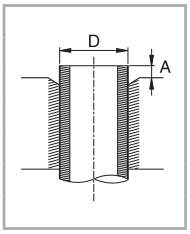
1. Make sure that you prepared the required tools.
   - Pipe cutter, reamer, flaring tool and pipe holder, etc.
2. If you want to shorten the pipe, cut it with a pipe cutter ensuring that the cut edge remains at 90° with the side of the pipe.
   - There are some examples of correct and incorrect cut edges below.





3. To prevent a gas leak, remove all burrs at the cut edge of the pipe with a reamer.
4. Carry out flaring work with a flaring tool as shown below.





Outer diameter [D(mm)]	Depth of the flare [A (mm)]	
	Flare tool	
	Clutch type	Wing nut type
ø 6.35	1.0~1.5	1.5~2.0
ø 9.52	1.0~1.5	1.5~2.0
ø 12.70	1.0~1.5	1.5~2.0
ø 15.88	1.0~1.5	1.5~2.0

5. Check that you flared the pipe correctly.
   - Below figures shows some examples of incorrectly flared pipes.

CAUTION
- If foreign matters or burrs are not removed after cutting the pipe, refrigerant gas may leak.
- If foreign matters enter inside of the pipe, the important interior parts of the unit may get damaged or product efficiency will be reduced. Therefore, direction of the pipe should be downward during cutting or flaring the pipe.

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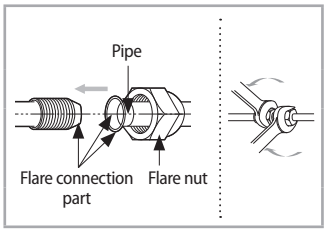
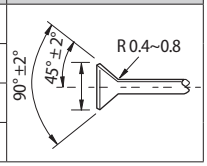
Refrigerant piping work

Tightening flare connection part

- Check that the flaring is properly made.
- Align the center of the piping and sufficiently tighten the flare nut with fingers. Then, tighten the flare nut with torque wrench until the wrench clicks. When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.
- Make sure to use ester oil to coat the flare connection part.

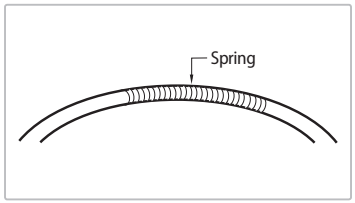


Outer diameter (mm)	Connection torque(kgf•cm)	Flare dimension (mm)	Flare shape (mm)
ø 6.35	145~175	8.70~9.10	
ø 9.52	333~407	12.80~13.20	
ø 12.70	505~615	16.20~16.60	
ø 15.88	630~769	19.30~19.70	

CAUTION
- Blowing nitrogen gas should be done when brazing the pipe.
- Make sure to use the provided flare nut
- Make sure that there are no cracks when bending the pipe.
- Do not fasten the flare nut with excessive strength.

Pipe bending

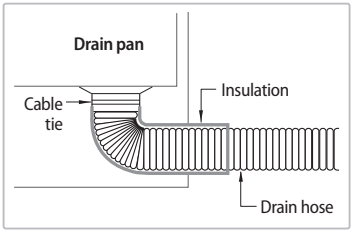
1. Perform bending of the pipe using the bender which has a specified bending radius.
2. Be sure to take full care to perform bending of the pipe successfully at one time. Bending and unbending the pipe more than twice makes the bending work increasingly difficult.
3. You may use the spring inserted into the gas pipe instead of the bender to bend the pipe.
4. When you bend the pipe using the spring, hold the pipe with both hands to prevent any distortion, and secure a minimum bending radius over 100mm.



Connecting the drain hose

- Connect the drain hose by inserting the extension drain hose to the drain connection port tightly.
- Insulated the extension drain hose, then fix it with a cable tie or a tape.

Piping material	Vinyl chloride (inner diameter of Ø16mm)
Insulation	Foamed polyethylene



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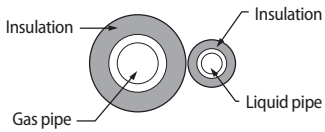
Selecting the insulator of the refrigerant pipe

- Insulate the gas pipe and liquid pipe by referring to the thickness of insulator for each pipe size.
- The standard condition for indoor temperature is 30℃ with humidity less than 85%. If the condition is out of this standard condition, use the pipe that is one grade thicker.

Pipe diameter (mm)	Minimum thickness of the insulator		Remarks
	PE material	EPDM material	
ø 6.35~ø 19.05	13	10	If the installation place has high humidity (such as basement of a building, seaside, near hot spring or lake etc.) increase the minimum thickness to next size up for each pipes.
ø 22.23~ø 31.75	19	13	
ø 38.10~ø 44.45	25	19	
-	32	25	

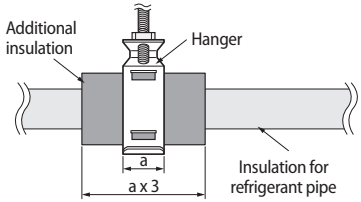
Insulating refrigerant pipe

- Pipe insulation
  - Insulation of the gas and liquid pipes can be in contact with each other but they should not be pressing each other.
  - When contacting the gas side and liquid side pipe, use thicker insulation.



CAUTION

- Make sure to install the insulation so that there is no gap or crack and use the adhesives on the connection part of it to prevent moisture from entering.
- Wind the refrigerant pipe with insulation tape if it is exposed to outside sunlight. (When winding the insulation tape, make sure that the thickness of the insulator does not get any thinner.)
- Install the refrigerant pipe respecting that the insulation does not get thinner on the bent part or hanger of pipe.
- If the thickness of the insulation gets thinner, use additional insulation.



ENGLISH

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Wiring work

Electrical work

- Wiring work should be performed in accordance with related laws such as technical specification on electric installation or installation guide.
- Copper cable should be used for wiring work and all the wirings or parts should be rated products.
- Wiring work should be performed by a company certified by an electric power company.
- Refer to the circuit diagram attached to the outdoor unit for detailed wiring work.
- Wiring work should be performed after disconnecting main circuit breaker and Y-joint switch.
- You must perform ground working 3. (Grounding resistance value should be less than 100Ω.) When ELB is installed, protective grounding resistance value can be applied. (When the ELB is 100mA, 0.1sec, protective grounding resistance value should be less than 250Ω at a place where electric danger is high and should be less than 500Ω at other places.)
- Do not connect the ground wire to the gas pipe, water pipe, lightning rod, or telephone.
  - Gas pipe: If the gas leaks, explosion or ignition may occur.
  - Water pipe: If rigid vinyl pipe is used, there will be no grounding effect.
  - Ground wire of telephone and lightning rod: The electric potential of ground wire may rise abnormally when lightening strikes.
- The ELB for ground-fault protection should be combined with MCCB or fuse equipped load switch. In this case, you should use the one that has at least the same or larger fuse capacity or the rated current of MCCB.
- Use the wires that comply with regulated specification and firmly connect to the terminal board. Then tighten it with the provided screws so that the terminal board (connecting cable locally procured, grounding terminal) cannot be moved by external force.
- When connecting outdoor unit main power, be aware of the connection order for 3 phase (R, S, T, N).
- If you install the heat pump system with a heater, install separate watt-hour meter.
  - If the common watt-hour meter is used with other products, you cannot measure the accurate electricity usage by the heater. Contact service center for further technical information on installing watt-hour meter.
- Standard power cable length should be below 50m.
  - If the length has to be over 50m, contact service center.
- Fix a cable tube using a CD connector (wire conduit) and bushing at the knock-out hole of the outdoor unit.

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Power supply and wire specification

▶ For heat pump products, power supply for heating must be separately installed.

Model name			AP80S0A	AP0AS0A
Power			3 phase 4 wires 380-415V, 50Hz	
Cooling	Power input	W	6,600	9,800
	Running current	A	12.0	16.5
Heating	Power input	W	-	-
	Running current	A	-	-
Starting current		A		
Power cable	Type		Equivaletnt to H07RN-F or higher	
	Below 20m	mm^2	4.0(Not included)	4.0(Not included)
	Over 20m	mm^2	6.0(Not included)	6.0(Not included)
Circuit breaker		A	30	40
Thickness of the earth wire		mm^2	4	4
Fuse capacity for control circuit		A	20	20

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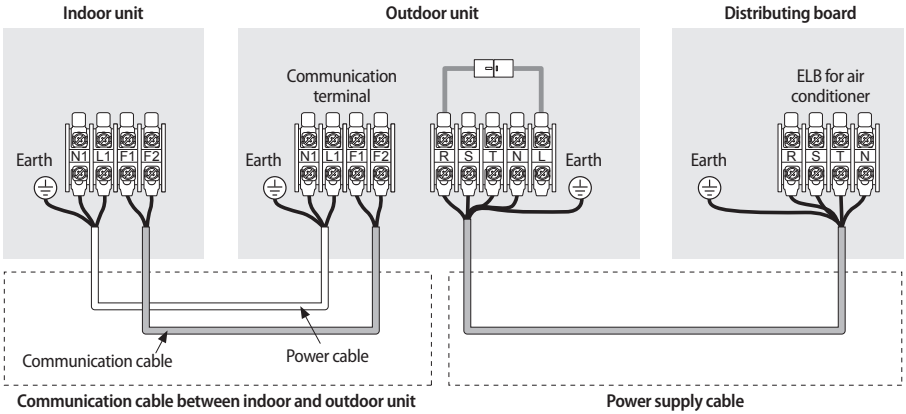
Wiring work

Connecting power and communication cable

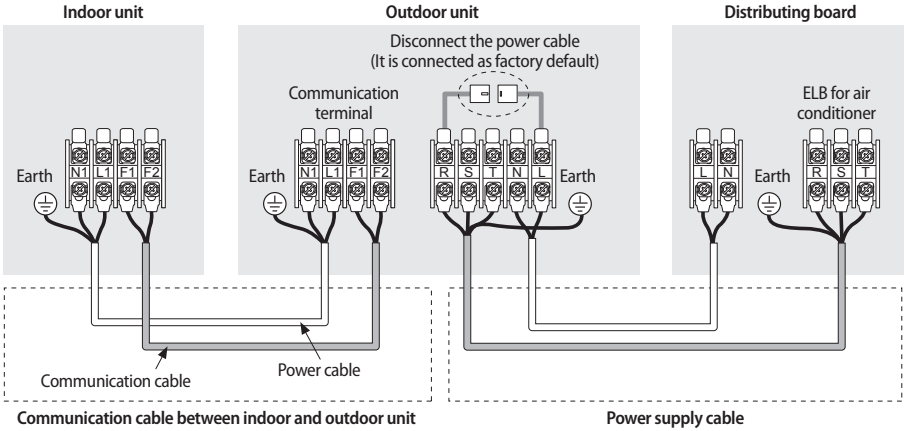
AP80S0A / AP0AS0A

▶ 3 phase 4 wires, 380-415V power supply

1. Remove the cover of the electrical component on the outdoor unit.
2. Connect the power cable (R, S, T, N) to the R, S, T, N of the terminal on the electrical component on the outdoor unit. (Power cable must be purchased separately.)
3. When tightening the screw on the terminal block, apply appropriate tightening torque to assemble cables to the terminal.
4. Install ELB [Earth Leakage breaker (for 4 wires)] for air conditioner. It must be selected according to the starting current of the compressor.



- When using power supply (R, S, T, N) with ELB [Earth Leakage breaker (for 3 wires)] alone or ELB(for 3 wires) with NFB
  - Remove the power cable (R-L) of the electrical parts and put the power R, S, T through ELB (3wires) and connect it to the R, S, T on the terminal, and put the power R, N through the ELB (2wires) to connect it to the L, N on the terminal.



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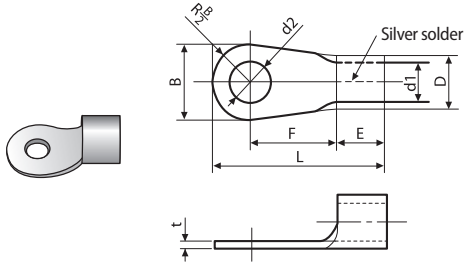
Selecting solderless ring terminal

- Select a compressed ring terminal of a power cable based on a nominal dimensions for cable.
- Cover a compressed ring terminal and a connector part of the power cable and then connect it.



Nominal dimensions for cable (mm²)		4/6		10	16	25		35		50	70
Nominal dimensions for screw (mm)		4	8	8	8	8	8	8	8	8	8
B	Standard dimension (mm)	9.5	15	15	16	12	16.5	16	22	22	24
	Allowance (mm)	±0.2		±0.2	±0.2	±0.3		±0.3		±0.3	±0.4
D	Standard dimension (mm)	5.6		7.1	9	11.5		13.3		13.5	17.5
	Allowance (mm)	+0.3 -0.2		+0.3 -0.2	+0.3 -0.2	+0.5 -0.2		+0.5 -0.2		+0.5 -0.2	+0.5 -0.4
d1	Standard dimension (mm)	3.4		4.5	5.8	7.7		9.4		11.4	13.3
	Allowance (mm)	±0.2		±0.2	±0.2	±0.2		±0.2		±0.3	±0.4
E	Min.	6		7.9	9.5	11		12.5		17.5	18.5
F	Min.	5	9	9	13	15	13	13	13	14	20
L	Max.	20	28.5	30	33	34		38	43	50	51
d2	Standard dimension (mm)	4.3	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
	Allowance (mm)	+0.2 0	+0.4 0	+0.4 0	+0.4 0	+0.4 0		+0.4 0		+0.4 0	+0.4 0
t	Min.	0.9		1.15	1.45	1.7		1.8		1.8	2.0

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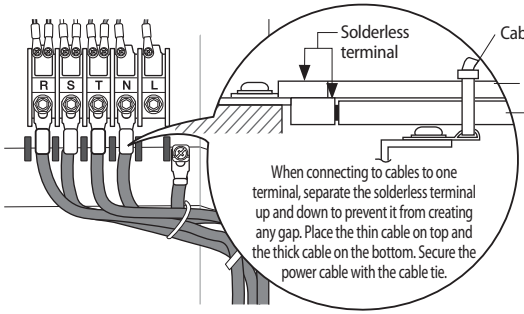
Wiring work

Connecting the power terminal

- Connect the cables to the terminal board with solderless ring terminals.
- Only use the certified and rated cables and make sure to firmly connect them without applying any external force to the terminal.
- Connect with a driver and a wrench that are able to apply the rated torque to the screws.
- If the terminal is loose, fire can occur due to arc heat generation. However, If the terminal is connected too firmly, the terminal may get damaged.

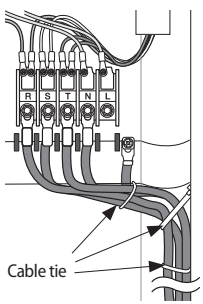

R S T N L
Solderless terminal
Cable tie
Thin cable
Thick cable
When connecting to cables to one terminal, separate the solderless terminal up and down to prevent it from creating any gap. Place the thin cable on top and the thick cable on the bottom. Secure the power cable with the cable tie.

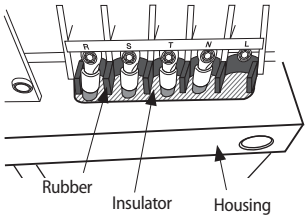
Screw	Tightening torque (kgf·cm)
M3	5.0~6.0
M3.5	8.0~10.0
M4	12.0~15.0
M5	20.0~25.0
M6	25.0~30.0

CAUTION
- When removing the outer sheath of the power supply cable, be careful not to scratch the inner sheath of the cable.
- Make sure that more than 20mm of the outer sheath of the indoor unit power supply cable and communication cable are inside the electrical component box.
- Install the communication cable separately from power cable and other communication cables.

Fixing the power cable

1. Fix the power cable with a cable tie as shown in the figure.
2. Fix the housing, which has an insulator, to the terminal board.





CAUTION
- Try to avoid each power cables from touching the refrigerant pipes.
- Arrange the cables by using knock-out hole.

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Grounding work

Grounding must be done by a qualified installer for your safety.

Grounding the power cable

- The standard of grounding may vary according to the rated voltage and installation place of the air conditioner.
- Ground the power cable according to the following table.

Installation place / Power condition	High humidity	Average humidity	Low humidity
Voltage of lower than 150V		Perform the grounding work 3. Note 1)	Perform the grounding work 2 if possible for your safety. Note 2)
Voltage of higher than 150V		Must perform the grounding work 3. Note 1) (Including the case where circuit breaker is installed)	

Note 1) **Grounding work 3**

- Grounding must be done by installation specialist.
- Check if the grounding resistance is lower than 100Ω. When installing a circuit breaker that can cut the electric circuit in case of a short circuit, the allowable grounding resistance can be 30~500Ω.

Note 2) **Grounding at dry place**

- The grounding resistance is should be lower than 100Ω and even in worst case, it should be lower than 250Ω)

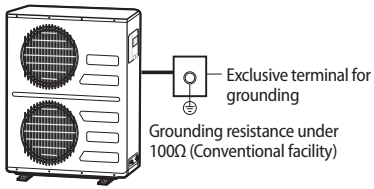
Performing the ground work

- Use the grounding wire by referring to the specification of the electric cable for the outdoor unit.

❖ **When using the exclusive terminal for grounding**

- When exclusive terminal for grounding is installed. Ex) Steel house etc.

AP80S0A



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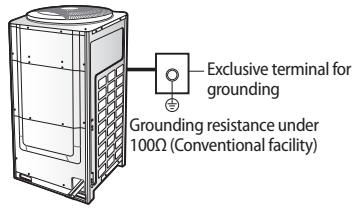
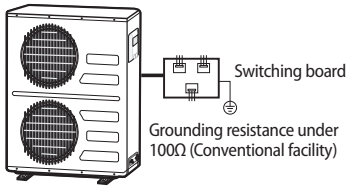


❖ **When using the exclusive terminal for grounding**

AP80S0A



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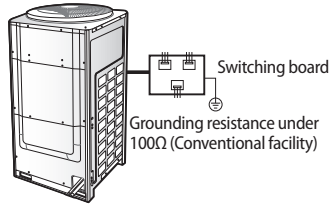

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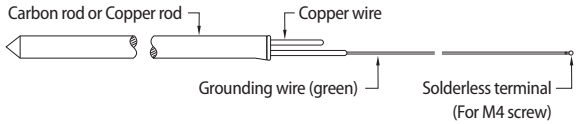
Wiring work

❖ **If you are using the grounding on the switching board.**

- ▶ If the grounding rod is used, user will be responsible for the cost of the grounding work.
- ▶ Grounding rod specification

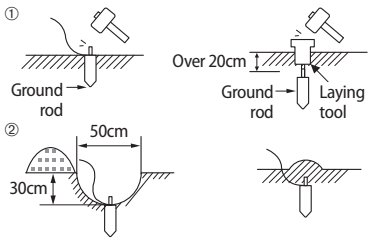


CAUTION **It could be dangerous if you connect the ground wire to the following places. Therefore, try to avoid connecting it.**

- Television antenna, gas pipe, aluminum chassis, flower vase, water line (You may connect ground wire to the water line if the grounding resistance is less than 3Ω. However, it must be pre-approved to the management authority of the water line.)
- If above examples cannot be avoided, make sure to get a pre-approval from the experts.

Grounding work procedure

▶ Make sure that grounding work is done in below procedure.

Procedure	Explanation	Caution
1. Select a place for grounding.	① Appropriate place • Humid place • Damp ground is better than sandy ground ② Inappropriate place • Place where with underground structure or facilities. (Gas pipe, water pipe, Service pipe, underground cable.) • If the grounding wire is paralle to the grounding pole for the lightning rod, make sure they are at least 2m apart from each other.	• Avoid sandy ground or ground with gravel since they have high grounding resistance. • Do not use with the telephone ground wire. • If you have buried it in a crowded area, firmly fix the ground wire.
2. Bury the grounding rod.	① If you have laying tool for grounding rod: • Bury the grounding rod to the surface. • Use the laying tool to bury it at least 20cm deeper from the surface. ② If you don't have laying tool: • Dig a hole as shown in the figure and bury it on the ground. • Fill the hole with the soil to bury the entire grounding rod.	
3. Arrange the grounding wire.	• If you need to extend the ground wire, attach the putty on the connection part and wind it with a tape. • Fix the grounding wire with staple to prevent it from getting tangled.	• Use the green vinyl wire with the thickness of the 2mm in diameter or 3.5mm² in cross section area • Make sure that the wire and the wire connection part is not buried underground.

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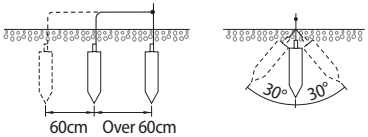
4. Check if the grounding work is properly done.	• After grounding has been completed, check the ground resistance with the earth tester and check if the result satisfies the standard value. • If the ground resistance value does not meet the standard value, bury the grounding rod deeper or add more grounding rods to meet the standard value.	Check the connection part 
5. Connect the grounding rod with the air conditioner.	• Make sure that grounding wire is connected to the grounding terminal on the outdoor unit.	

Gas leak test and vacuum drying

Gas leak tests on the outdoor unit is done initially from the factory, but you must test for gas leakage after the installation.

1. Purge the pipe and run vacuum test. (Pressure should not increase for a minute.)
2. Insert the nitrogen gas so that pressure reaches minimum 2kg/cm².
3. Use soap water to check the leakage on the connection part.
4. For final vacuum test, leave the outdoor unit for 24 hours under pressure of 28kg/cm² and check for any signs of pressure decrease.
5. Discharge the nitrogen gas.
6. Keep the outdoor unit in vacuum status.
7. If length of the pipe exceeds the standard length, charge additional refrigerant.
8. Open the outdoor unit valve and circulate the refrigerant to the indoor unit so that pressure of the entire pipe becomes even.

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Refrigerant charging

Allowable refrigerant pipe length and amount of additional refrigerant charging

- ▶ Air purge refrigerant for piping is not filled in this product.
- ▶ Make sure to vacuum inside of the connection pipe using vacuum pump after connecting pipes.

Allowable refrigerant pipe length

Model name	Maximum allowable pipe length	Maximum height difference of the pipe
AP80S0A Series AP0AS0A Series	50m	20~30m

How to add refrigerant

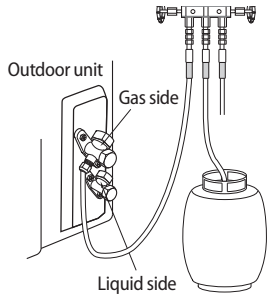
1. Connect manifold gauge to the gas side service valve.
2. Take the trial operation with the cooling trial operation mode.
3. Perform trial operation for longer than 10 minutes and add refrigerant based on the below pressure table.

   ❋ Purpose of pressure table : If additional refrigerant filling is needed due to the leakage of the refrigerant or re-installation, add refrigerant using pressure table.

Pressure table for temperatures (Cooling operations)

AP0AS0A✳✳✳✳						AP80S0A✳✳✳✳					
		Outdoor Temp. (℃)						Outdoor Temp. (℃)			
		21	35	46	52			21	35	46	52
Indoor Temp. (℃)	21	3.5	4.2	4.5	4.7	Indoor Temp. (℃)	21	4.1	5.1	5.4	5.6
	27	4.2	4.9	5.2	5.4		27	4.4	5.4	5.7	5.9
	32	4.8	5.5	5.8	6.0		32	5.0	6.0	6.3	6.5

4. Check the stability of the pressure for 10 minutes.



5. After adding refrigerant, fasten cap nuts firmly.

CAUTION

- Use prescribed amount of refrigerant if you need to charge additional refrigerant due to extended pipe length. For accurate measure, use a digital scale.

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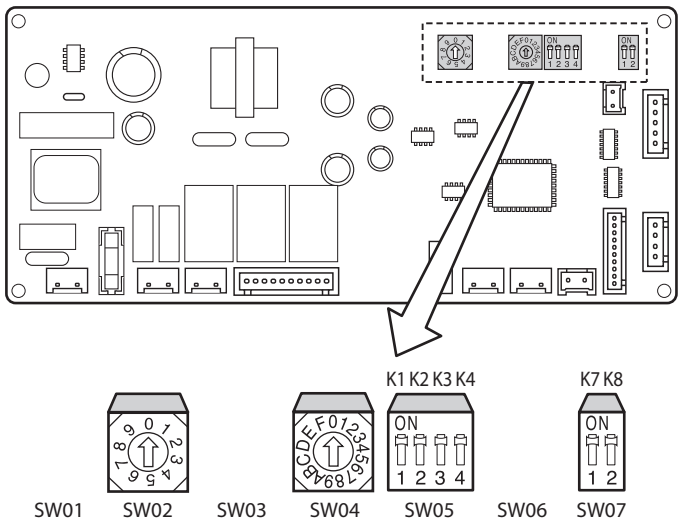
Setting the option switches & function keys

Setting the option switch of the indoor unit



Setting the main PCB option

Option	ON (Factory default setting)	OFF
Duct fan speed (K1) Use: Use Low, High and Auto fan speed Disuse: Use High, Turbo and Auto fan speed ✻ In Speed mode, fan speed will be set to Turbo regardless of the switch settings	Disuse	Use
K2	Option	Not set : Always on
K3	Option	Not set : Always on
Disregard communication error (K4) - Use it for displaying the product in exhibition (Do not use this setting other than in exhibition) - Only disregards communication error	Disuse	Use

✻ DIP switch K7, K8 is used to attach 'External contact controller (MIM-B14)'

✻ For detail information on installing external contact controller, refer to installation manual for remote support in the MIM-B14.

✻ Do not change the setting on your own.

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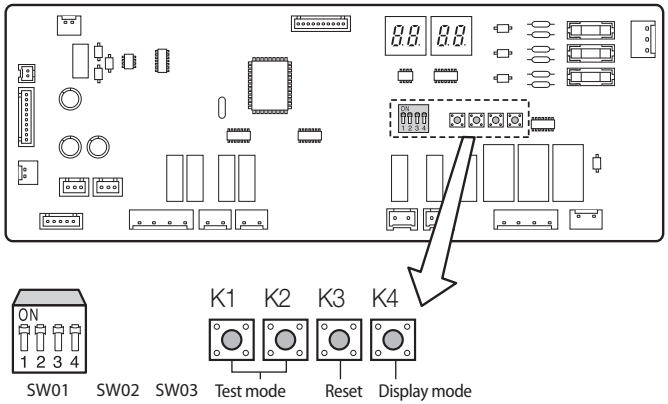
Setting the option switches & function keys

Setting the outdoor unit KEY



Option	ON	OFF
Setting by model name	AP80S0✳X	AP0AS0✳X
Setting model (Heat pump/Cooling only)	Heat pump	Cooling only

✳ DIP SW01 is a factory default setting. Do not change the setting on your own.

✳ When installation is completed, check the status of functional setting on each model before the trial operation.

K2 (Number of pressing)	KEY operation	7-Segment display
1	Cooling test operation	
2	End KEY operation	No display

K3 (Number of pressing)	KEY operation	7-Segment display
1	Reset operation	Same as reset status

K4 (Number of pressing)	Displayed contents	Display			
		SEG 1	SEG 2	SEG 3	SEG 4
1	Discharge temperature	1	(Data) 87℃ → (Display) 0, 8, 7		
2	Outdoor temperature	2	(Data) -12℃ → (Display) -, 1, 2		
3	-	-	-		
4	Evap. Temperature	4	(Data) 15℃ → (Display) 0, 1, 5		
5	Indoor temperature	5	(Data) 27℃ → (Display) 0, 2, 7		
6	-	-	-		
7	Operation data display	7	Heat pump	Protection control	Compressor
			0: Cooling 1: Heating	0: No protection control 1: Frozen 2: Overload 3: Discharge	0: Stop 1: Minimum operation (1 Comp) 2: Rated operation (2 Comp)

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Check lists after completing the installation

▶ After completing the installation, you must check the following.

Installation	Indoor unit	• Have you checked the external surface and the internal part of the indoor unit? • Is the place well-ventilated and ensures space for service? • Have you checked if the center of the indoor unit is ensured and it is installed horizontally in level? • Have you connected refrigeration pipes properly?
	Outdoor unit	• Have you checked the external surface and the internal part of the outdoor unit? • Is there any possibility of short circuit due to the heat of an outdoor unit? • Is the place well-ventilated and ensures space for service? • Is the outdoor unit fixed securely?
Refrigerant pipe work		• Have you checked for any gas leakage? • Are the length and the height difference between the refrigerant pipes within the allowable range? • Have you properly insulated pipes? • Is the quantity of the additional refrigerant correctly weighed in? • You must record the amount of additional refrigerant charging on the service record label placed outside the outdoor unit.
Installing the drain pipe		• Have you completed the drain test? • Is the drainpipe properly insulated?
Wiring work		• Have you checked for interference between the power and the communication cable? • Have you performed the earthing work 3 to the outdoor unit? • Is the length of the wire within allowable range? • Is the wiring route correct? • Have you used verified power supply cable and the communication cable?
Option		• Check whether the vibration-resistance frame is correctly installed if there is a possible vibration of the outdoor unit.

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Trial operation

Inspection before trial operation

1. Check the power and communication cable of the indoor and outdoor unit.
2. Turn on the power 2 hours before initial operation to pre-heat the crank case heater.
3. Check the power supply between the outdoor unit and the cabinet panel.
   - Check the 3 phase power of the compressor and the distribution board [R (Red), S (White), T (Black)] with the 3 phase tester.
   - Check the line voltage(R-S, S-T, T-R) 380-415V power and phase voltage (R-N, S-N, T-N) 220-240V power with the voltage meter.
4. Once the outdoor unit is turned on, it performs the tracking to check the connected indoor unit and option.

CAUTION

- Turn on the power 2 hours before initial operation so the crank case heater can be heated enough to start the system.

Trial operation

1. Run the unit by KEY mode.
   - Operate the unit by KEY mode.
   - Inspect the compressor sound during the initial operation. If roaring sound is heard, stop the operation.
   - If roaring sound is heard and the pressure does not change, back-lashing of the compressor may occur. Therefore, check the power supply of the compressor. If the problem occurs continuously, check the compressor power cable. (3 Phase: T1(L1)(R)(U) → Red, T2(L2)(S)(V) → White, T3(L3)(T)(W) → Black
   - Make sure that all the indoor units are properly operating.
2. Check the indoor and outdoor unit's operating status.
   - Check if the indoor unit cools.
   - Indoor unit control: Check the air flow direction and fan speed.
   - Check for indoor and outdoor unit's abnormal running noise.
   - Check for proper drainage from the indoor unit in cooling mode.
3. If error occurs during trial operation, check the error code of the unit and follow the instruction.
4. Explain to the customer how to use the air conditioner according to the user's manual.
5. Give this installation manual to the user.

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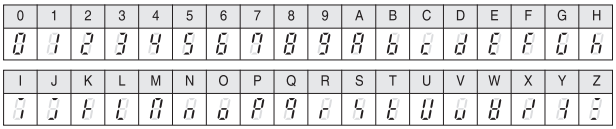
Error diagnosis

Error display

✻ LED display



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Error display	Error description
E101	Error between Indoor unit – Outdoor unit
E103	Error between Indoor unit panel – Main unit
E121	Room temperature sensor of indoor unit (Open or short)
E122	EVA_in temperature sensor of indoor unit (Open or short)
E162	Breakdown of EEPROM IC
E185	Cross wiring error between communication and power of indoor unit
E193	Indoor panel Zero-Crossing error
E194	Indoor Main Zero-Crossing error
E221	Outdoor temperature sensor (Open or short)
E256	Discharge sensor (Open or short)
E416	Compressor stop by discharge temperature's protection control
E425	Reverse phase or phase open
E451	Low pressure on low pressure switch (protection control)
E453	Overload error of outdoor unit's fan motor (by temperature)
E454	RPM error of outdoor unit's fan motor
E455	IMP overload error of outdoor unit's fan motor (by temperature)
E456	Outdoor unit fan over current error
E457	Backlash error of outdoor unit's fan motor
E460	Incorrect connection of the indoor unit communication-power cable is detected or CT3 over current

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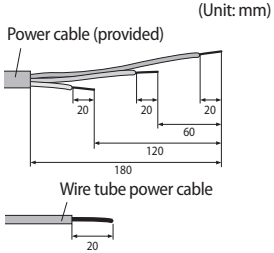
How to connect your extended power cables

❋ Items to prepare (compressor and insulation tape should be prepared by an installation technician.)

Tools	Crimping plier	Connection sleeve (mm)	Insulation tape	Contraction tube (mm)
Spec	MH-14	20 x Ø 6.5(HxOD)	Width 19mm	70 x Ø 8.0(LxOD)
Shape				

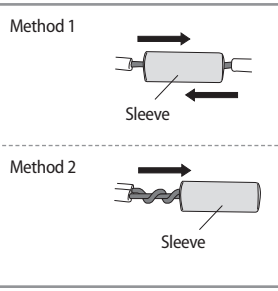
1. As shown in the figure, peel off the shields from the rubber/wire of the power cable.
   - Peel off 20 mm of the wire shields of the tube installed already.



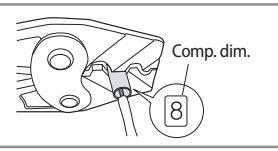
2. Insert both sides of core wire of the power cable into the connection sleeve.
   ▶ Method 1
   - Push the core wire in to the sleeve from both sides.

   CAUTION
   • After peeling off the tube wire, you must insert a contraction tube.

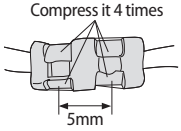
   ▶ Method 2
   - Twist the wire cores together and push it in to the sleeve.



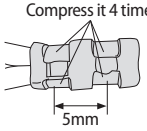
3. Using a cramping pliers, compress the two points and flip it over and compress another two points in the same location.
   - The compression dimension should be 8.0.
   - After compressing it, pull both sides of the wire to make sure it is firmly pressed.



▶ Method 1



▶ Method 2



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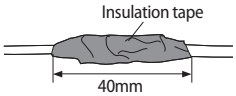
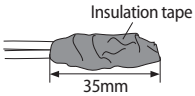
4. Wrap it with the insulation tape twice and position your contraction tube in the middle of the insulation tape.

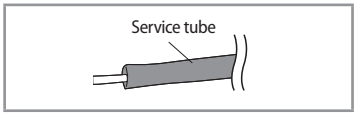
▶ Method 1



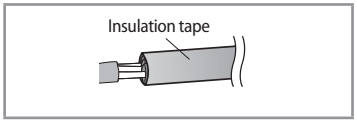
▶ Method 2



5. Apply heat to the service tube to contract it.

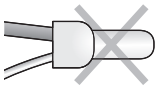


6. After tube contraction work is completed, wrap it with the insulation tape to finish.



WARNING

- In case of extending the electric wire, please DO NOT use a round-shaped pressing socket.
  - Incomplete wire connections can cause electric shock or a fire.



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